

Scientific Note

SWALLOW BUG (HETEROPTERA: CIMICIDAE) IN WASHINGTON WITH AN UNUSUAL OVERWINTERING SITE

The swallow bug, *Oeciacus vicarius* Horvath, is recorded from much of the range of its primary host, the cliff swallow, *Hirundo pyrrhonota* Vieillot. This area includes the northern and western United States and southwestern Canada. It has not been collected previously, however, in Washington state (Ryckman, R. E., D. G. Bentley & E. F. Archbold. 1981. Bull. Soc. Vector Ecol., 6: 93-142; Froeschner, R. C. 1988. Catalog of the Heteroptera, or true bugs, of Canada and the continental United States. E. J. Brill, New York). On 25, 28 Sep and 2 Dec 1989, large numbers of swallow bugs were found in empty mud dauber nest cells (Hymenoptera: Sphecidae). *Oeciacus vicarius* has been recorded previously from mud dauber nests; specimens have been taken from nests found under a bridge 7 mi north of Davis, California (Usinger, R. L. 1966. Monograph of Cimicidae. Thomas Say Foundation Vol. 7. Entomol. Soc. Amer.), but the account presents no further information of that "strange record."

In Washington, the bugs were taken from mud dauber cells constructed on the end support walls of a small concrete bridge through which a canyon feeder stream flows into the Snake River (WASHINGTON. WHITMAN Co.: 10.5 km W of Wawawai Canyon). On the ceiling of the bridge were approximately 60 mud nests of the cliff swallow, the preferred host of *O. vicarius*. The distance between these cliff swallow nests and wasp cells was 20-33 m. Although the swallow nests were used during the summer of 1989, they had probably been unoccupied for several months because *H. pyrrhonota* usually fledges and departs its nests by early September in eastern Washington.

Ten cells were chosen at random from the mud dauber nests collected, and the number of swallow bugs were counted. An average of 28 bugs were found per cell (range 3-71). I also examined five of the swallow nests on the bridge and found bugs in each ($\bar{x} = 9$, range 4-17). These numbers are quite low when compared to the 6000+ bugs recorded from a single swallow nest previously (Loye, J. E. 1985. Cah. Orstom, ser. Entomol. Med. et Parasitol., 12: 133-139), but swallow bug numbers vary widely, depending upon the time of year (C. E. Hopla, personal communication). I found adult bugs and fourth and fifth nymphal stages in these wasp cells. There were also large numbers of cast skins indicating that moulting takes place after the birds have gone or during winter months.

Although the bridge had numerous small cracks and crevices where bugs could overwinter, I could not get deep enough into these to search for bugs. No bugs were found when I could pry loose small amounts of concrete. Although swallow bugs were found in the abandoned bird nests, these may be less than optimal overwintering sites because the nests are extremely fragile and break easily. Many of the nests at this site were already partially destroyed. Swallow bugs were found, however, in large piles of bird guano on the concrete beams under a few of the

nests built along the sides of each section of bridge. Because this dung often solidifies, becoming harder than the bird's nest, the guano may be a suitable overwintering site.

The large numbers of bed bugs in the mud dauber cells indicate that large numbers of bugs leave the bird nests to search for overwintering sites. The mud dauber cells are probably one of the more stable structures for overwintering because they are difficult to dislodge from the bridge surface and are usually in protected areas. Although at least 20 m had to have been traveled in this case to reach the closest wasp cells, it is not uncommon to find swallow bugs 50 m from the edge of a colony (C. E. Hopla, personal communication).

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HOST RECORDS FOR SOME TROPICAL PHYTOPHAGOUS AND PARASITIC INSECTS

This report documents host records of phytophagous insects, and their parasites, that were reared at the Estación de Biología Chamela. Data for the site are: MEXICO. *JALISCO*: Estación de Biología Chamela, 19°30' N, 105°03' W, elevations to 500 m. The climate of this site is monsoonal (Bullock, S. H. 1986. *Arch. Met. Geoph. Biocl. ser. B*, 36: 297–316) with a mean annual rainfall (1977–1989) of 724 mm. Vegetation is mostly tropical deciduous forest with semideciduous forest along seasonal watercourses (Lott, E. J. et al. 1987. *Biotropica*, 19: 228–235); the deciduous aspect and reproductive seasonality of the site is detailed elsewhere (Bullock, S. H. & J. A. Solís. 1990. *Biotropica*, 22: 22–35). The flora of the site has been compiled (Lott, E. J. 1985. *Listados florísticos de México. III. La Estación de Biología Chamela, Jalisco. Instit. Biología, UNAM, México*).

Rearing data are given in Table 1. The insects reared are deposited at either the Estación de Biología Chamela, Jalisco, or at the Instituto de Biología, UNAM, México, D.F., México; specimen numbers (SN) are listed here. Taxonomic determinations were made by: A. Pescador R. (APR), C. R. Beutelspacher B. (CRB), J. Butze (JB), J. A. Chemsak (JAC), E. G. Monroe (EGM), C. W. O'Brien (CWO), J. A. Halsted (JAH), N. E. Woodly (NEW), B. E. Cooper (BEC) and D. R. Whitehead (DRW).